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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/078,474	02/21/2002	Hoki Kwon	V637-02769 US	4860

7590 11/06/2003
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EXAMINER

NGUYEN, DUNG T

ART UNIT PAPER NUMBER

2828

DATE MAILED: 11/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/078,474

Applicant(s)

KWON, HOKI

Examiner

Dung (Michael) T Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.



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TECHNOLOGY CENTER 2800**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 4-10, 12-15, and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sirbu et al. (US6542531) in view of Sun (US6144682).

With respect to claims 1-2, 7-8, 10, 12-13, and 19, Sirbu show in Fig. 5 a VCSEL comprising an InP substrate, a lower DBR 12a, a bottom InP spacer 16a, an InP active layer 18 (col.3, l.5), and a top InP spacer 16b. Sirbu do not disclose a first GaAs layer and a second GaAs layer. Sun teaches in Fig. 1 a first GaAs layer 124 and a second GaAs layer 128. For the benefit of a VCSEL, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Sirbu a first GaAs layer and a second GaAs layer as taught by Sun.

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With respect to claims 4-6, 9, 14-15, and 20, Sirbu show in Fig.5 an insulation layer 2 or 28 in Fig.6.

Claims 3, 11, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sirbu et al. (US6542531) in view of Sun (US6144682) and further in view of Janz et al. (US5408110). Sirbu and Sun disclose all limitations of the claims except for the thickness of the GaAs layer. Janz teach the GaAs layer with a thickness of 37.7 nm (col.10, l.38-39). For the benefit of selecting a GaAs layer thickness between 20 and 40 nm, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Sirbu and Sun the GaAs layer with a thickness of 37.7 nm as taught by Janz.

Claims 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sirbu et al. (US6542531) in view of Sun (US6144682) and further in view of Shigematsu et al. (US2002/0027232). Sirbu and Sun disclose all limitations of the claims except for the GaAsSb junction layer. Shigematsu teach the GaAsSb layer (para.0057). For the benefit of a VCSEL, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Sirbu and Sun a GaAsSb layer as taught by Shigematsu.

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Citation of The Pertinent References

The following US patents are being made of record, even though they were not relied upon in this Office action, for being similar in subject matter, and may be relied upon in any future Office Actions: 5745515 and 5574738.


Communication Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung (Michael) T Nguyen whose telephone number is (703) 305-7159. The examiner can normally be reached on 8:30 - 17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.

Nguyen (Michael) Dung


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